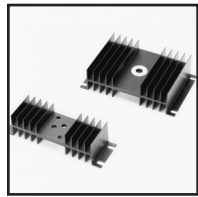


Extruded Heat Sinks



EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



401 & 403 SERIES

Double-Surface Heat Sinks for TO-3 Case Styles

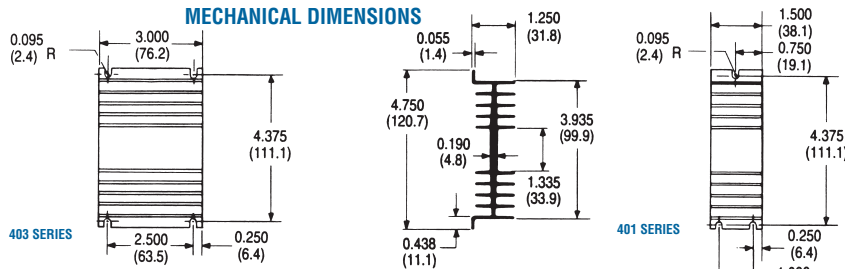
TO-3; Stud-Mount

| Standard P/N | Width in. (mm) | Overall Dimensions in. (mm) | Height in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|-----------------------------|-----------------|-------------------------------------|-------------------------------------|-------------------|---------------------|
| | | | | | Natural Convection | Forced Convection | |
| 401A | 4.750 (120.7) | 1.500 (38.1) | 1.250 (31.8) | (1) TO-3 | 80°C @ 30W | 1.5°C/W @ 250 LFM | 0.1500 (68.04) |
| 401F | 4.750 (120.7) | 1.500 (38.1) | 1.250 (31.8) | 0.270 in. (6.9)-Dia Hole | 80°C @ 30W | 1.5°C/W @ 250 LFM | 0.1500 (68.04) |
| 401K | 4.750 (120.7) | 1.500 (38.1) | 1.250 (31.8) | None | 80°C @ 30W | 1.5°C/W @ 250 LFM | 0.1500 (68.04) |
| 403A | 4.750 (120.7) | 3.000 (76.2) | 1.250 (31.8) | (1) TO-3 | 55°C @ 30W | 0.9°C/W @ 250 LFM | 0.3500 (158.76) |
| 403F | 4.750 (120.7) | 3.000 (76.2) | 1.250 (31.8) | 0.270 in. (6.9)-Dia Hole | 55°C @ 30W | 0.9°C/W @ 250 LFM | 0.3500 (158.76) |
| 403K | 4.750 (120.7) | 3.000 (76.2) | 1.250 (31.8) | None | 55°C @ 30W | 0.9°C/W @ 250 LFM | 0.3500 (158.76) |

With fins oriented vertically in cabinet sidewall applications, 401 and 403 Series heat sinks are recommended for critical space applications where maximum heat dissipation is required for high-power TO-3 case styles. Forced convection performance is also exemplary with these double surface fin types. Semiconductor mounting hole style "F" offers a single centered 0.270

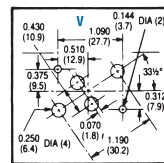
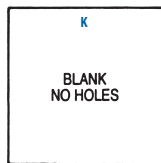
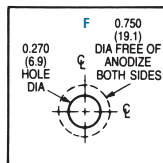
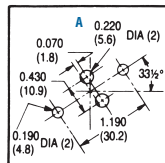
in. (6.9)-diameter mounting hole (with a 0.750 in. (19.1)-diameter area free of anodize) for mounting stud-type diodes and rectifiers. Hole pattern "V" available upon request. Material: Aluminum Alloy, Black Anodized.

MECHANICAL DIMENSIONS



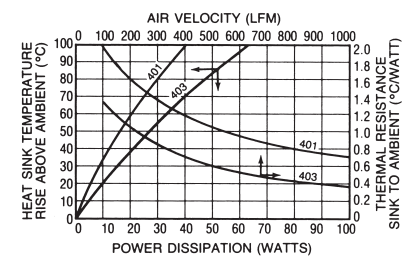
Dimensions: in. (mm)

SEMICONDUCTOR MOUNTING HOLES



401 AND 403 SERIES
(EXTRUSION
PROFILE 1024)

NATURAL AND FORCED CONVECTION CHARACTERISTICS



413/421/423 SERIES

Low-Height Double-Surface Heat Sinks for TO-3 Case Styles and Diodes

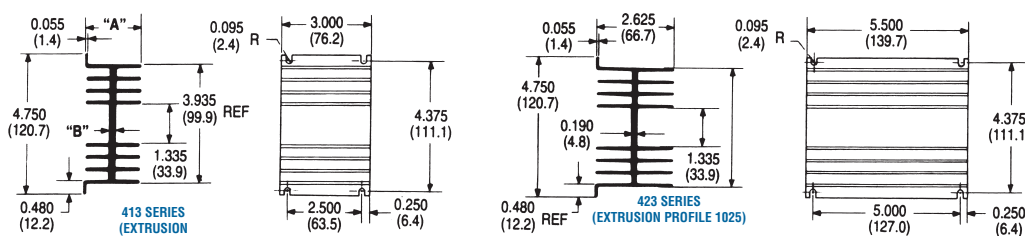
TO-3; DO-5; Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions Length in. (mm) | Height "A" in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|------------------------------------|---------------------|-------------------------------------|-------------------------------------|--------------------|---------------------|
| | | | | | Natural Convection | Forced Convection | |
| 413A | 4.750 (120.7) | 3.000 (76.2) | 1.875 (47.6) | (1) TO-3 | 72°C @ 50W | 0.85°C/W @ 250 LFM | 0.6300 (285.77) |
| 413F | 4.750 (120.7) | 3.000 (76.2) | 1.875 (47.6) | 0.270 in. (6.9)-Dia Hole | 72°C @ 50W | 0.85°C/W @ 250 LFM | 0.6300 (285.77) |
| 413K | 4.750 (120.7) | 3.000 (76.2) | 1.875 (47.6) | None | 72°C @ 50W | 0.85°C/W @ 250 LFM | 0.6300 (285.77) |
| 421A | 4.750 (120.7) | 3.000 (76.2) | 2.625 (66.7) | (1) TO-3 | 58°C @ 50W | 0.7°C/W @ 250 LFM | 0.6300 (285.77) |
| 421F | 4.750 (120.7) | 3.000 (76.2) | 2.625 (66.7) | 0.270 in. (6.9)-Dia Hole | 58°C @ 50W | 0.7°C/W @ 250 LFM | 0.6300 (285.77) |
| 421K | 4.750 (120.7) | 3.000 (76.2) | 2.625 (66.7) | None | 58°C @ 50W | 0.7°C/W @ 250 LFM | 0.6300 (285.77) |
| 423A | 4.750 (120.7) | 5.500 (140.2) | 2.625 (66.7) | (1) TO-3 | 47°C @ 50W | 0.5°C/W @ 250 LFM | 1.1700 (530.71) |
| 423K | 4.750 (120.7) | 5.500 (140.2) | 2.625 (66.7) | None | 47°C @ 50W | 0.5°C/W @ 250 LFM | 1.1700 (530.71) |

Space-saving double surface 413, 421, and 423 Series utilize finned surface area on both sides of the power semiconductor mounting surface to provide maximum heat dissipation in a compact profile. Ready to install on popular power components in natural and forced convection applications. Apply Wake-

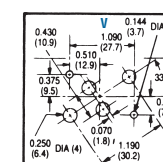
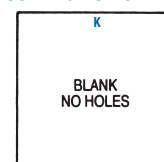
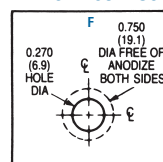
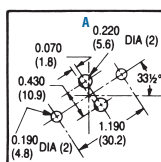
field Type 126 silicone-free thermal compound or Wakefield DeltaPad™ interface materials for maximum performance. Material: Aluminum Alloy, Black Anodized.

MECHANICAL DIMENSIONS



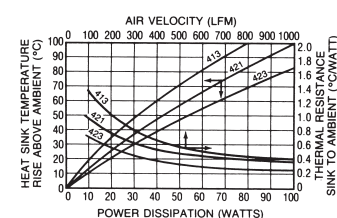
SERIES "A" "B"
413 1.875 (47.6) 0.200 (5.1)
421 2.625 (66.7) 0.190 (4.8)

Dimensions: in. (mm)



SEMICONDUCTOR MOUNTING HOLES

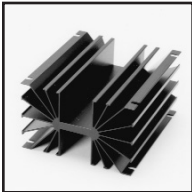
NATURAL AND FORCED CONVECTION CHARACTERISTICS





Extruded
Heat Sinks

EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



431 & 433 SERIES

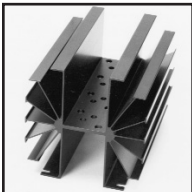
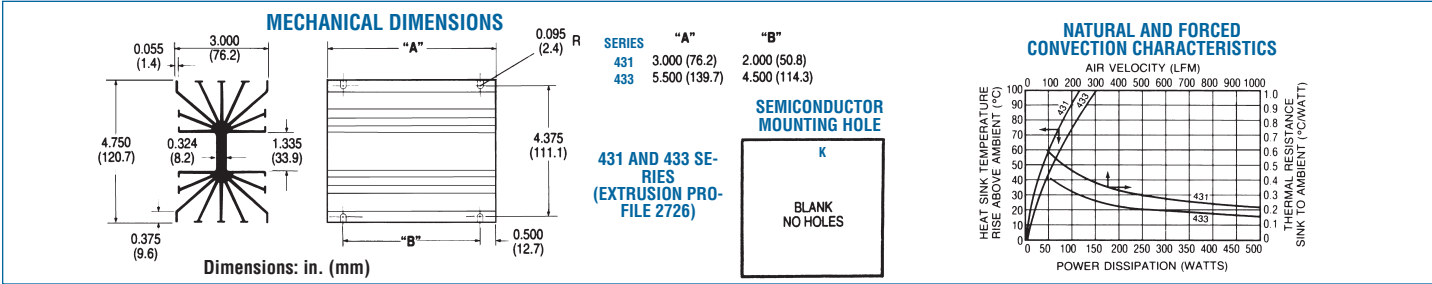
High-Performance Heat Sinks for 30-100W Metal Power Semiconductors

TO-3; Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions | | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|---------------------|-----------------|-------------------------------------|-------------------------------------|--------------------|---------------------|
| | | Length "A" in. (mm) | Height in. (mm) | | Natural Convection | Forced Convection | |
| 431K | 4.750 (120.7) | 3.000 (76.2) | 3.000 (76.2) | None | 55°C @ 50W | 0.40°C/W @ 250 LFM | 0.7800 (353.81) |
| 433K | 4.750 (120.7) | 5.500 (139.7) | 3.000 (76.2) | None | 42°C @ 50W | 0.28°C/W @ 250 LFM | 1.4900 (675.86) |

Need maximum heat dissipation from a TO-3 rectifier heat sink in minimum space? The Wakefield 431 and 433 Series center channel double-surface heat sinks offer the highest performance-to-weight ratio for minimum volume occupied for TO-3, diode, and stud-mount metal power semiconductors in the 30- to

100-watt operating range. Additional interface resistance reduction for maximized overall performance can be achieved with proper application of Wakefield Type 126 silicone-free thermal compound. Material: Aluminum Alloy, Black Anodized.



435 SERIES

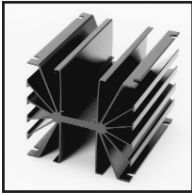
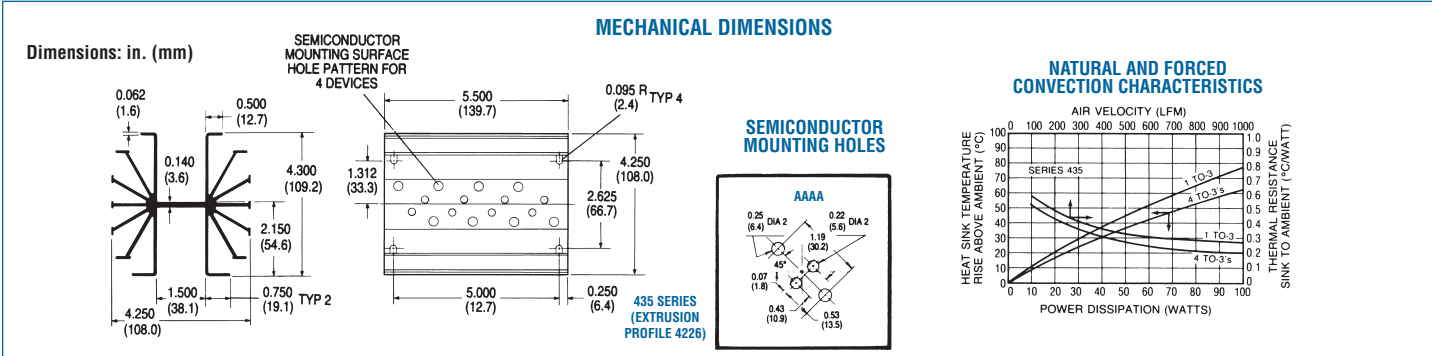
Lightweight Quadruple Mount Heat Sink for TO-3 Case Styles

TO-3

| Standard P/N | Width in. (mm) | Nominal Dimensions | | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|--------------------|-----------------|-------------------------------------|-------------------------------------|--|---------------------|
| | | Length in. (mm) | Height in. (mm) | | Natural Convection | Forced Convection | |
| 435AAAA | 4.250 (108.0) | 5.500 (139.7) | 4.300 (109.2) | (4) TO-3 | 37°C @ 50W 54°C @ 80W | 0.38°C/W @ 250 LFM 0.24°C/W @ 600 LFM | 1.1500 (521.64) |

This lightweight high-performance heat sink is designed to mount and cool efficiently one to four TO-3 style metal case power semiconductors. The Type 435AAAA is the standard configuration available from stock, predrilled for mounting four TO-3 style devices. Increased performance can be achieved with the proper

selection and installation of a Wakefield Type 175 DeltaPad Kapton™ interface material for each power semiconductor or, for maximum reduction of case-to-sink interface loss, the application of Wakefield Type 126 silicone-free thermal compound. Material: Aluminum Alloy, Black Anodized.



441 SERIES

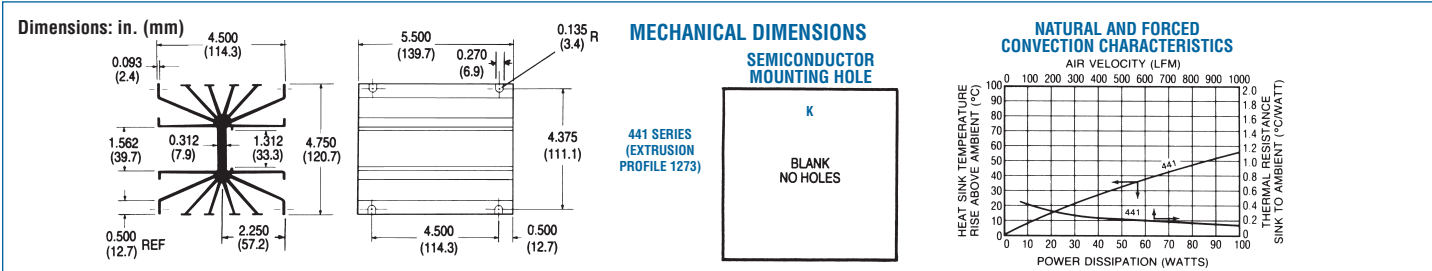
High-Performance Natural Convection Heat Sinks for Rectifiers and Diodes

Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions | | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|--------------------|-----------------|-------------------------------------|-------------------------------------|--|---------------------|
| | | Length in. (mm) | Height in. (mm) | | Natural Convection | Forced Convection | |
| 441K | 4.750 (120.7) | 5.500 (139.7) | 4.500 (114.3) | None | 34°C @ SOW 47°C @ 80W | 0.30°C/W @ 250 LFM 0.19°C/W @ 600 LFM | 1.9700 (893.59) |

Designed for vertical mounting within a power supply enclosure or equipment cabinet without forced airflow available. This Wakefield 441 Series heat sink will dissipate up to 100 watts efficiently in natural convection with a maximum 55°C heat sink temperature rise above ambient. When applied in a forced convec-

tion environment, the 441K Type will achieve thermal resistance of 0.18°C/W (sink to ambient) at 1000 LFM. Supplied with no predrilled device mounting hole pattern. Material: Aluminum Alloy, Black Anodized.



EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



465 & 476 SERIES

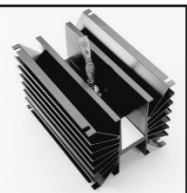
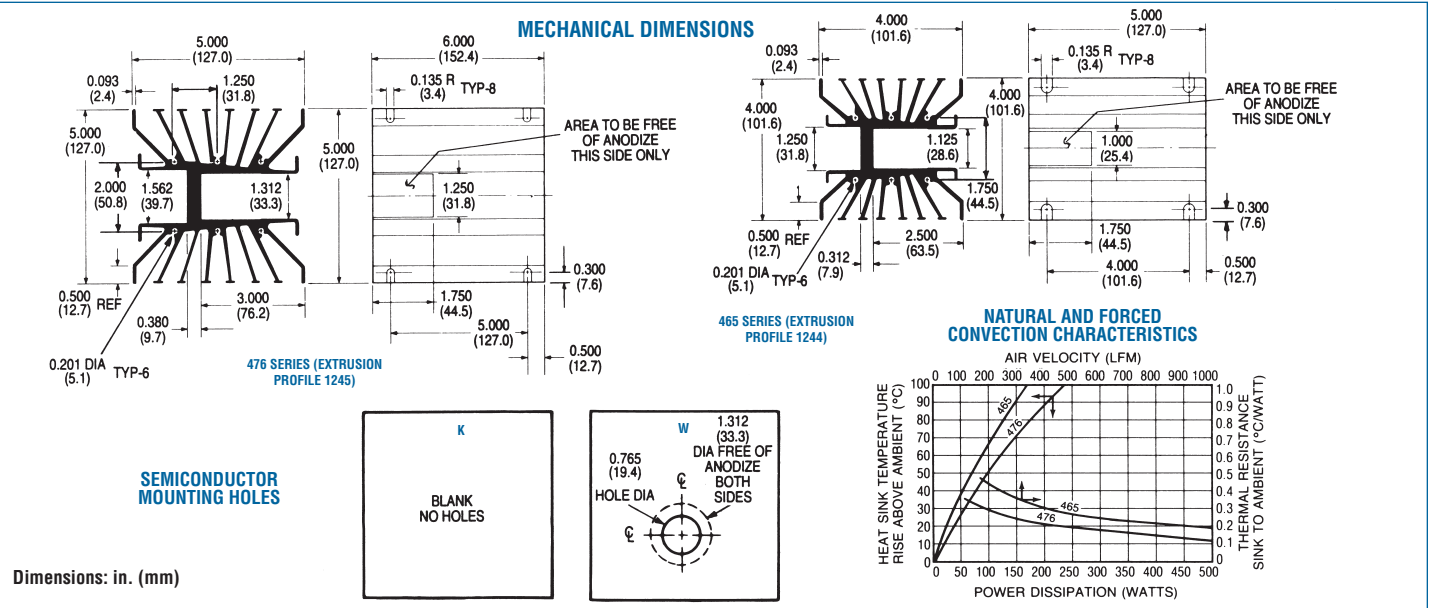
High-Power Heat Sinks for Medium Hex-Type Rectifiers and Diodes

Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions | | Hex Style Type | Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|--------------------|-----------------|----------------|------------------------------------|-------------------------------------|--------------------|---------------------|
| | | Length in. (mm) | Height in. (mm) | | | Natural Convection | Forced Convection | |
| 465K | 4.000 (101.6) | 5.000 (127.0) | 4.000 (101.6) | 1.060 in. Hex | None | 38°C @ 50W | 0.27°C/W @ 500 LFM | 1.9300 (875.45) |
| 476K | 5.000 (127.0) | 6.000 (152.4) | 5.000 (127.0) | 1.250 in. Hex | None | 25°C @ 50W | 0.19°C/W @ 500 LFM | 2.8200 (1279.15) |
| 476W | 5.000 (127.0) | 6.000 (152.4) | 5.000 (127.0) | 1.250 in. Hex | 0.765 in. (19.4) Dia. Center Mount | 25°C @ 50W | 0.19°C/W @ 500 LFM | 2.8000 (1270.08) |

Wakefield Engineering has designed four standard heat sink types for ease of installation and efficient heat dissipation for industry standard hex-type rectifiers and similar stud-mount power devices: 465, 476, 486, and 489 Series. The 465 and 476 Series shown here are de-

signed for 1.060 in. Hex (465 Type) and 1.250 in. Hex (476 Type). The 476W Type is available predrilled for an 0.765 in. (19.4) dia. mounting hole. Material: Aluminum Alloy, Black anodized.



486 & 489 SERIES

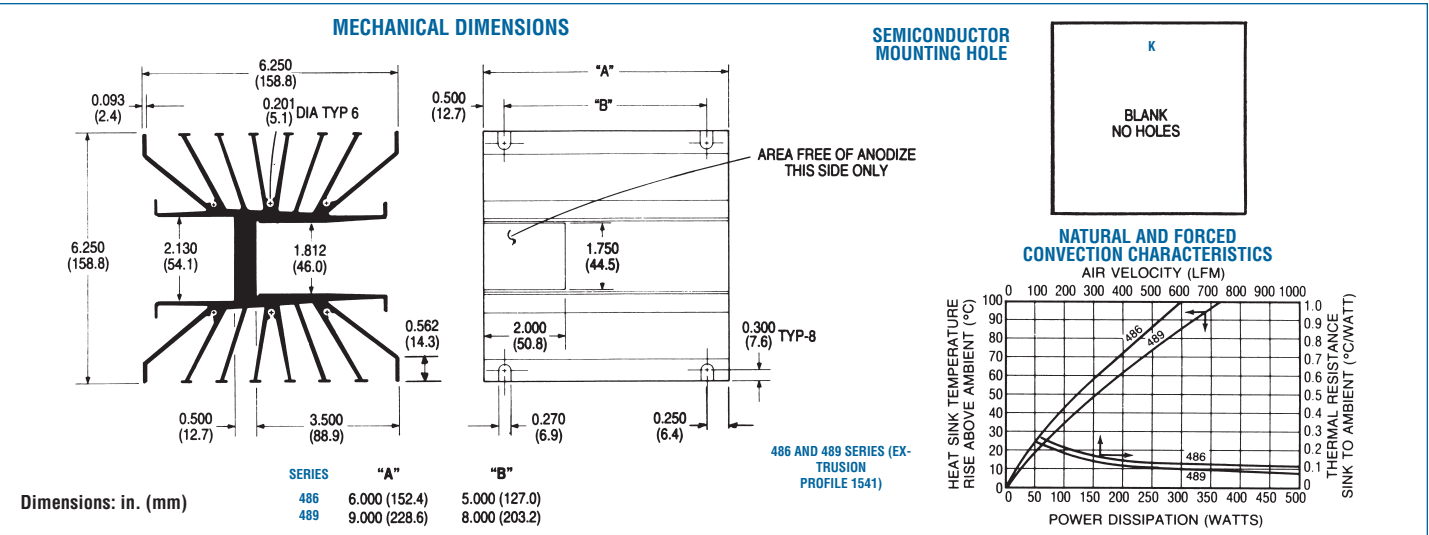
Heat Sinks for High-Power Hex-Type Rectifiers and Diodes

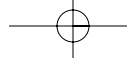
Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions | | Hex Style Type | Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|----------------|--------------------|-----------------|----------------|-----------------------|-------------------------------------|--------------------|---------------------|
| | | Length in. (mm) | Height in. (mm) | | | Natural Convection | Forced Convection | |
| 486K | 6.250 (158.8) | 6.000 (152.4) | 6.250 (158.8) | 1.750 in. Hex | None | 24°C @ 50W | 0.20°C/W @ 250 LFM | 4.2100 (1909.66) |
| 489K | 6.250 (158.8) | 9.000 (228.6) | 6.250 (158.8) | 1.750 in. Hex | None | 86°C @ 250W | 0.13°C/W @ 500 LFM | 6.1400 (2785.10) |
| | | | | | | 19°C @ 50W | 0.15°C/W @ 250 LFM | |
| | | | | | | 75°C @ 250W | 0.10°C/W @ 500 LFM | |

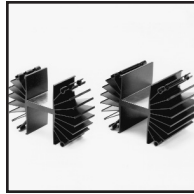
These two heat sink types accept industry standard 1.750 in. (44.5) hex-type devices for mounting and efficient heat dissipation. Each type is provided with a 1.750 in. (44.5) x 2.000

in. (50.8) area on the semiconductor base mounting surface which is free of anodize. Material: Aluminum Alloy, Black Anodized.





EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



490 SERIES

King Size Heat Sinks for High-Power Rectifiers

GENERAL PURPOSE

| Standard P/N | Nominal Dimensions | | | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|-----------------|--------------------|------------------------|--------------------|--|-------------------------------------|--------------------|------------------------|
| | Width in. (mm) | Length "A" in. (mm) | Height in. (mm) | | Natural Convection | Forced Convection | |
| 490-35K | 9.250 (235.0) | 3.500 (88.9) | 6.750 (171.5) | None | 84°C @ 200W | 0.18°C/W @ 600 LFM | 3.2400 (1469.66) |
| 490-6K | 9.250 (235.0) | 6.000 (152.4) | 6.750 (171.5) | None | 60°C @ 200W | 0.13°C/W @ 600 LFM | 5.4700 (2481.19) |
| 490-12K | 9.250 (235.0) | 12.000 (304.8) | 6.750 (171.5) | None | 45°C @ 200W | 0.09°C/W @ 600 LFM | 10.6200 (4817.23) |

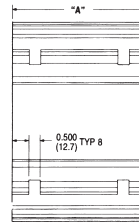
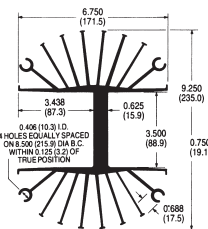
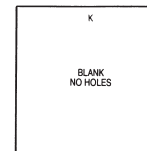
The 490 Series can be used to mount a single high-power rectifier or a grouping of smaller power devices. The semiconductor device mounting surface is free of anodize on the entire surface on one side only; finish overall is black anodize. Use Type 109 mounting brackets (see accessories section) for mounting to enclosure wall and for electrical isolation. The anodize-

free mounting surface is milled for maximum contact area. The 490 Series Can also be drilled for mounting and cooling IGBTs and other isolated power modules. Material: Aluminum Alloy, Black Anodized.

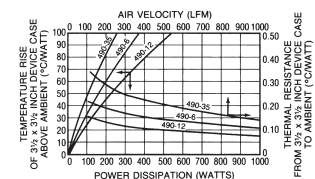
MECHANICAL DIMENSIONS

490 SERIES
(EXTRUSION PROFILE 2131)

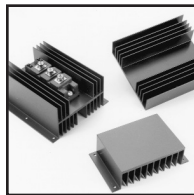
Dimensions: in. (mm)

SEMICONDUCTOR
MOUNTING HOLE

NATURAL AND FORCED CONVECTION CHARACTERISTICS



PERFORMANCE, LOW PROFILE HEAT SINKS FOR POWER MODULES & IGBT'S



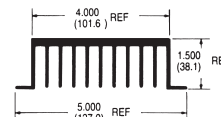
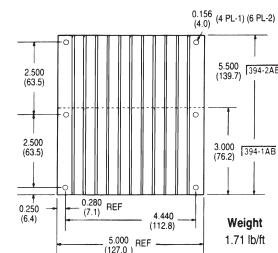
394, 395, 396 SERIES

| Standard P/N | Overall Dimensions: in. (mm) | | | Device Base Mounting Area (mm) | Base Mounting Holes | Thermal Resistance at Typical Load | |
|-----------------|------------------------------|--------------------|-------------------|--------------------------------------|------------------------|--|--|
| | Length in. (mm) | Height in. (mm) | Width in. (mm) | | | Natural Convection (θ_{sa}) ⁽¹⁾ (°C/W) | Forced Convection (θ_{sa}) (°C/W @ 500 LFM) |
| 394-1AB | 3.000 (76.2) | 1.500 (38.1) | 5.000 (127.0) | 101 x 76 | 4 | 1.85 | 0.90 |
| 394-2AB | 5.500 (139.7) | 1.500 (38.1) | 5.000 (127.0) | 101 x 139 | 6 | 1.51 | 0.60 |
| 395-1AB | 3.000 (76.2) | 2.500 (63.5) | 5.000 (127.0) | 50 x 76 | 4 | 1.10 | 0.50 |
| 395-2AB | 5.500 (139.7) | 2.500 (63.5) | 5.000 (127.0) | 50 x 139 | 6 | 0.90 | 0.32 |
| 396-1AB | 3.000 (76.2) | 1.380 (35.1) | 5.000 (127.0) | 50 x 76 | 4 | 1.85 | 1.07 |
| 396-2AB | 5.500 (139.7) | 1.380 (35.1) | 5.000 (127.0) | 50 x 139 | 6 | 1.51 | 0.64 |

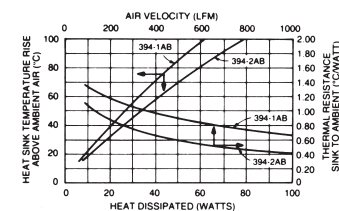
Note: 1. Thermal resistance values shown are for black anodized finish at 50°C rise above ambient.

MECHANICAL DIMENSIONS

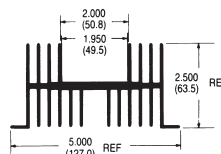
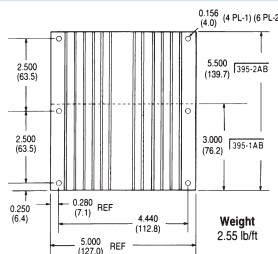
394 SERIES (EXTRUSION PROFILE 7332)



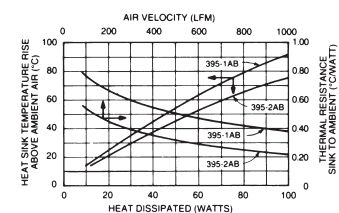
NATURAL AND FORCED CONVECTION CHARACTERISTICS



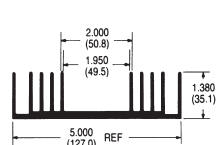
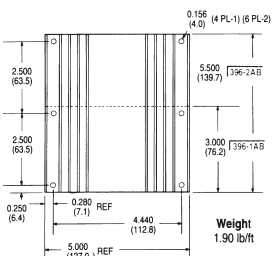
395 SERIES (EXTRUSION PROFILE 7330)



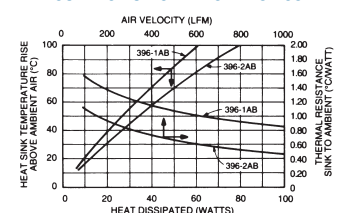
NATURAL AND FORCED CONVECTION CHARACTERISTICS



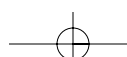
396 SERIES (EXTRUSION PROFILE 7331)



NATURAL AND FORCED CONVECTION CHARACTERISTICS



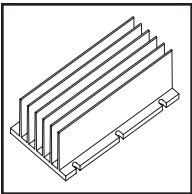
Dimensions: in. (mm)



Extruded
Heat Sinks



EXTRUDED HEAT SINKS FOR DC/DC CONVERTERS



SERIES 557, 558 & 559

Heat Sinks for “Full-Brick” DC/DC Converters

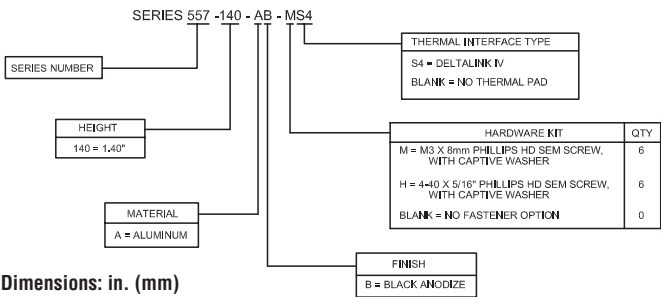
| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Fin Orientation | Number of Fins | Forced Convection Thermal Resistance at 300 ft/min (C/W) | Natural Convection Power Dissipation (Watts) 40°C Rise Heat Sink to Ambient |
|--------------|-------------------------------|-----------------|-----------------|----------------|--|---|
| 557-140AB | 4.60 (116.8) x 2.40 (61.0) | 1.40 (35.6) | Horizontal | 6 | 1.3 | 14 |
| 558-75AB | 2.40 (61.0) x 4.60 (116.8) | 0.75 (19.1) | Vertical | 16 | 1.8 | 12 |
| 559-50AB | 2.40 (61.0) x 4.60 (116.8) | 0.50 (12.7) | Vertical | 27 | 2.2 | 10 |

Material: Aluminum, Black Anodized

- Standard mounting hole pattern mates with Vicor DC/DC converters.
- Aluminum extruded fin construction keeps DC/DC converter modules cool in both forced and natural convection applications.
- Three fin heights, two flow direction options.
- Black anodized finish standard.
- Integral thermal interface pad option eliminates need to order and install pad separately.
- Ordering a single part number with the hardware kit option provides everything necessary to keep your converter cool.

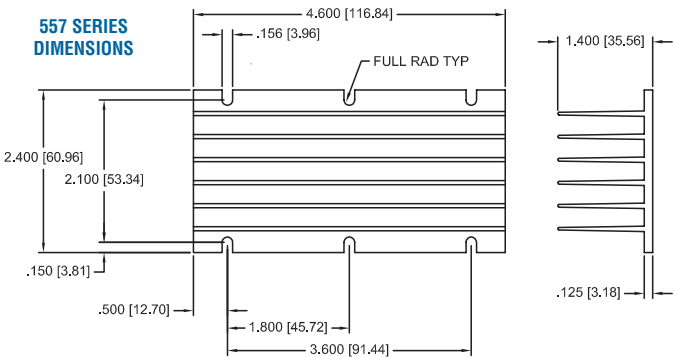
MECHANICAL DIMENSIONS

PRODUCT DESIGNATION



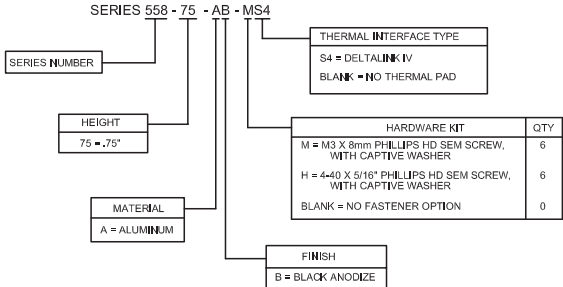
Dimensions: in. (mm)

557 SERIES
DIMENSIONS



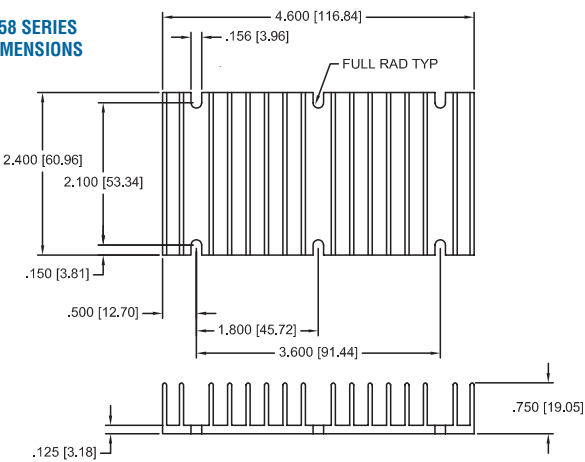
MECHANICAL DIMENSIONS

PRODUCT DESIGNATION



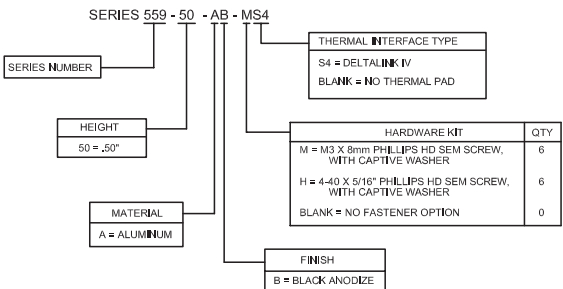
Dimensions: in. (mm)

558 SERIES
DIMENSIONS



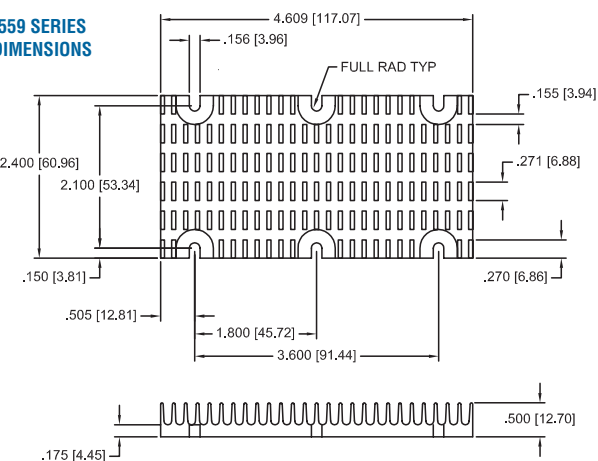
MECHANICAL DIMENSIONS

PRODUCT DESIGNATION



Dimensions: in. (mm)

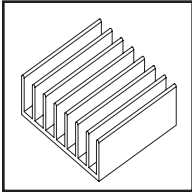
559 SERIES
DIMENSIONS





Extruded
Heat Sinks

EXTRUDED HEAT SINKS FOR DC/DC CONVERTERS



SERIES 517, 527, 518 & 528

Heat Sinks for “Half-Brick” DC/DC Converters

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Fin Orientation | Number of Fins | THERMAL PERFORMANCE | |
|--------------|-------------------------------|-----------------|-----------------|----------------|---|--|
| | | | | | Natural Convection Power Dissipation (Watts) 60°C Rise Heat Sink to Ambient | Forced Convection Thermal Resistance at 300 ft/min (C/W) |
| 517-95AB | 2.28 (57.9) x 2.40 (61.0) | 0.95 (24.1) | Horizontal | 8 | 11W | 2.1 |
| 527-45AB | 2.28 (57.9) x 2.40 (61.0) | 0.45 (11.4) | Horizontal | 11 | 7W | 2.3 |
| 527-24AB | 2.28 (57.9) x 2.40 (61.0) | 0.24 (6.1) | Horizontal | 11 | 5W | 4.2 |
| 518-95AB | 2.40 (61.0) x 2.28 (57.9) | 0.95 (24.1) | Vertical | 8 | 11W | 2.2 |
| 528-45AB | 2.40 (61.0) x 2.28 (57.9) | 0.45 (11.4) | Vertical | 11 | 7W | 2.1 |
| 528-24AB | 2.40 (61.0) x 2.28 (57.9) | 0.24 (6.1) | Vertical | 11 | 5W | 3.5 |

Material: Aluminum, Black Anodized

• Standard mounting hole patterns mate with the majority of “half-brick” DC/DC converters on the market. • Aluminum extruded fin construction keeps DC/DC converter modules cool in both forced and natural convection applications. • Vertical and horizontal fin configurations

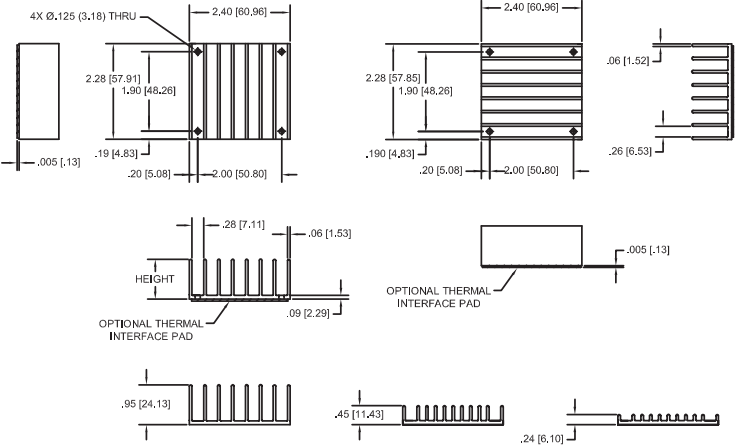
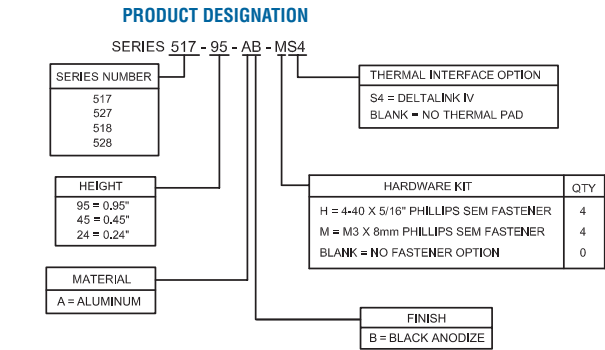
available in a variety of heights. • Black anodized finish standard. • Integral thermal interface pad option eliminates need to order and install pad separately. • Ordering a single part number with the hardware kit option provides everything necessary to keep your converter cool.

MECHANICAL DIMENSIONS

517, 527, 518 AND 528 SERIES

517/527 SERIES DIMENSIONS

518/528 SERIES DIMENSIONS

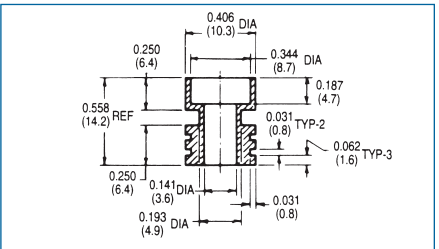
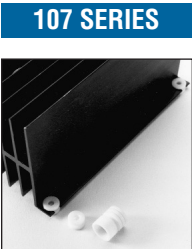
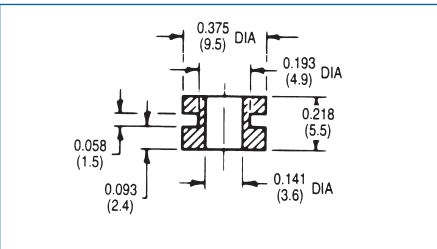


Dimensions: in. (mm)

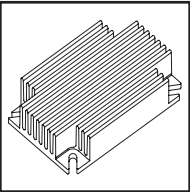
MOUNTING HARDWARE FOR EXTRUDED HEAT SINKS

100 SERIES Teflon Mounting Insulators

| Standard P/N | Description | For Use with Series | Mounting Hardware | Material | Hipot Rating (VAC) | Weight lbs. (grams) |
|--------------|------------------------|-------------------------|-------------------|----------|--------------------|---------------------|
| 103 | Spool-shaped insulator | 300, 400, 600, 111, 113 | #6-32 screw | Teflon | 1500 | 0.00012 (0.05) |
| 107 | Spool-shaped insulator | 300, 400, 600, 111, 113 | #6-32 screw, nut | Teflon | 5000 | 0.0034 (1.54) |



EXTRUDED HEAT SINKS FOR DC/DC CONVERTERS



537 & 547 SERIES

Heat Sinks for “Quarter-Brick” DC/DC Converters

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Fin Orientation | Number of Fins | Forced Convection Thermal Resistance at 300 ft/min (C/W) |
|--------------|-------------------------------|-----------------|-----------------|----------------|--|
| 537-95AB | 2.28 (57.9) x 1.45 (36.8) | 0.95 (24.1) | Horizontal | 8 | 2.1 |
| 537-45AB | 2.28 (57.9) x 1.45 (36.8) | 0.45 (11.4) | Horizontal | 13 | 2.3 |
| 537-24AB | 2.28 (57.9) x 1.45 (36.8) | 0.24 (6.1) | Horizontal | 14 | 4.2 |
| 547-95AB | 1.45 (36.8) x 2.28 (57.9) | 0.95 (24.1) | Vertical | 11 | 2.2 |
| 547-45AB | 1.45 (36.8) x 2.28 (57.9) | 0.45 (11.4) | Vertical | 20 | 2.1 |
| 547-24AB | 1.45 (36.8) x 2.28 (57.9) | 0.24 (6.1) | Vertical | 22 | 3.5 |

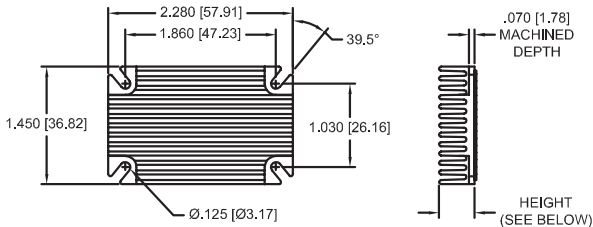
Material: Aluminum, Black Anodized

• Mounting slots accommodate two hole patterns: 1.86" x 1.03" and 2.00" x 1.20", fitting the vast majority of quarter-brick converters on the market. • Designed for optimum use in forced convection applications. • Vertical and horizontal fin configurations available in a variety of heights. • Black anodized finish standard. • Integral thermal interface pad option eliminates need to order and install pad separately. • Ordering a single part number with the hardware kit option provides everything necessary to keep your converter cool.

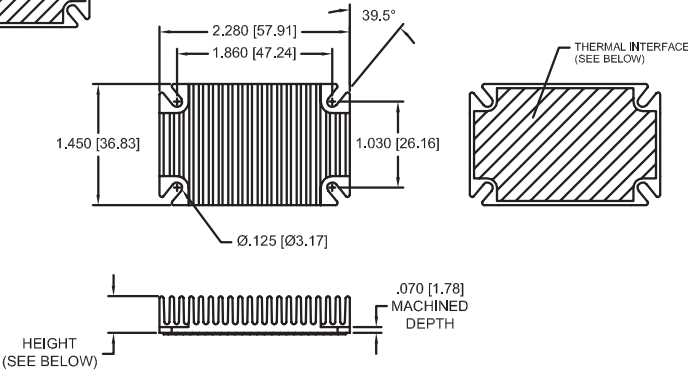
MECHANICAL DIMENSIONS

537 & 547 SERIES

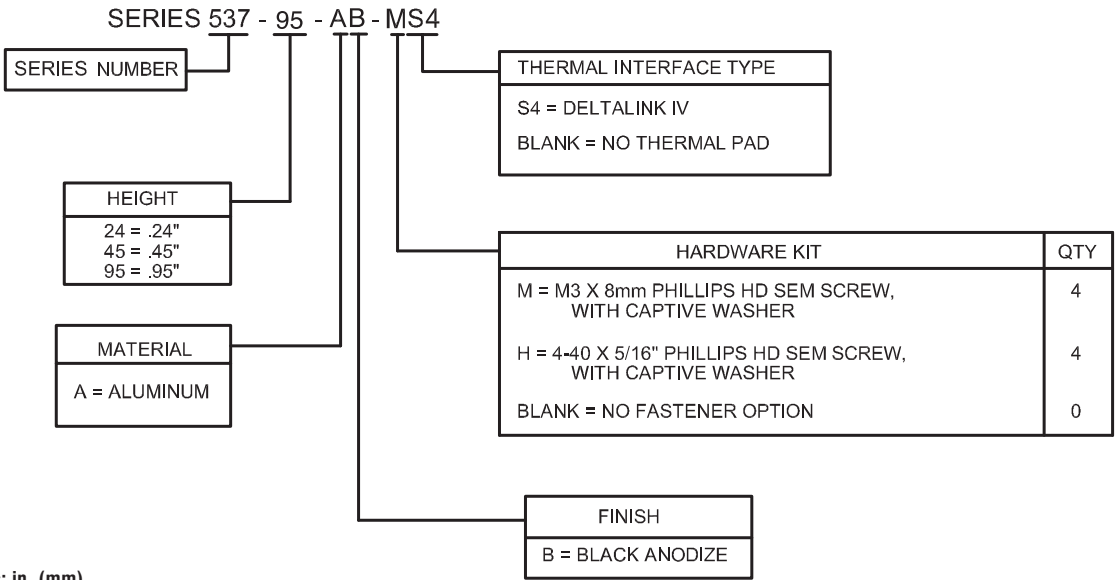
537 SERIES DIMENSIONS



547 SERIES DIMENSIONS



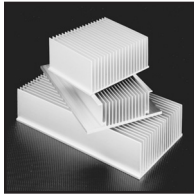
PRODUCT DESIGNATION



Dimensions: in. (mm)


**Bonded Fin
Heat Sinks**

HIGH FIN DENSITY HEAT SINKS FOR POWER MODULES, IGBTs, RELAYS



510, 511 & 512 SERIES

| Standard Catalog P/N ⁽⁵⁾ | | | | Milled Base ⁽¹⁾ | Nonmilled Base ⁽²⁾ | Natural | Forced |
|-------------------------------------|---------------------|-----------------|----------------|----------------------------|-------------------------------|---------------------------|---------------------------|
| Milled | Nonmilled | Base Width | Length | ("M Series") | ("U" Series) | Convection ⁽³⁾ | Convection ⁽⁴⁾ |
| Base ⁽¹⁾ | Base ⁽²⁾ | in. (mm) | in. (mm) | in. (mm) | in. (mm) | (°C/W) | (°C/W @ 100 CFM) |
| 510-3M | 510-3U | 7.380 (187.452) | 3.000 (76.2) | 3.106 (78.9) | 3.136 (79.7) | 0.56 | 0.088 |
| 510-6M | 510-6U | 7.380 (187.452) | 6.000 (152.4) | 3.106 (78.9) | 3.136 (79.7) | 0.38 | 0.070 |
| 510-9M | 510-9U | 7.380 (187.452) | 9.000 (228.6) | 3.106 (78.9) | 3.136 (79.7) | 0.29 | 0.066 |
| 510-12M | 510-12U | 7.380 (187.452) | 12.000 (304.8) | 3.106 (78.9) | 3.136 (79.7) | 0.24 | 0.062 |
| 510-14M | 510-14U | 7.380 (187.452) | 14.000 (355.6) | 3.106 (78.9) | 3.136 (79.7) | 0.21 | 0.059 |
| 511-3M | 511-3U | 5.210 (132.33) | 3.000 (76.2) | 2.350 (59.7) | 2.410 (61.2) | 0.90 | 0.120 |
| 511-6M | 511-6U | 5.210 (132.33) | 6.000 (152.4) | 2.350 (59.7) | 2.410 (61.2) | 0.65 | 0.068 |
| 511-9M | 511-9U | 5.210 (132.33) | 9.000 (228.6) | 2.350 (59.7) | 2.410 (61.2) | 0.56 | 0.060 |
| 511-12M | 511-12U | 5.210 (132.33) | 12.000 (304.8) | 2.350 (59.7) | 2.410 (61.2) | 0.45 | 0.045 |
| 512-3M | 512-3U | 7.200 (182.88) | 3.000 (76.2) | 2.350 (59.7) | 2.410 (61.2) | 0.90 | 0.120 |
| 512-6M | 512-6U | 7.200 (182.88) | 6.000 (152.4) | 2.350 (59.7) | 2.410 (61.2) | 0.65 | 0.068 |
| 512-9M | 512-9U | 7.200 (182.88) | 9.000 (228.6) | 2.350 (59.7) | 2.410 (61.2) | 0.56 | 0.060 |
| 512-12M | 512-12U | 7.200 (182.88) | 12.000 (304.8) | 2.350 (59.7) | 2.410 (61.2) | 0.45 | 0.045 |

Notes:

1. Precision-milled base for maximum heat transfer performance (flatness 0.002 in./in.)

2. Nonmilled base flatness: 0.006 in./in.

3. Natural convection heat dissipation for distributed heat sources at 50°C rise.

4. Forced convection heat dissipation for distributed heat sources at 100 cubic feet per minute, shrouded condition.

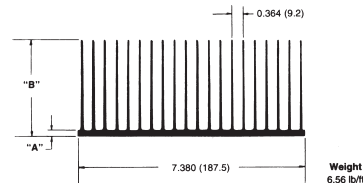
5. Standard models are provided without finish.

MECHANICAL DIMENSIONS

510 SERIES

510 Series (Extrusion Profile 5113)

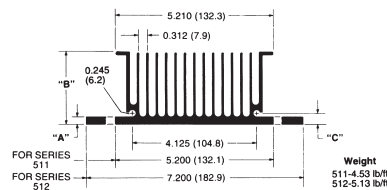
| Series | A | B | Flatness |
|--------|-------------|--------------|----------------------------|
| 510-U | 0.216 (5.5) | 3.136 (79.7) | 0.006 in./in. (0.15 mm/mm) |
| 510-M | 0.165 (4.2) | 3.106 (78.9) | 0.002 in./in. (0.05 mm/mm) |



511 AND 512 SERIES

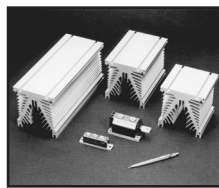
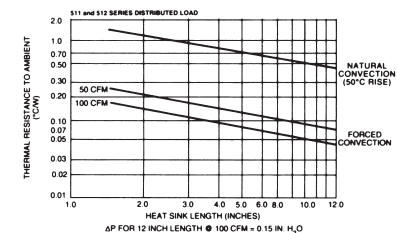
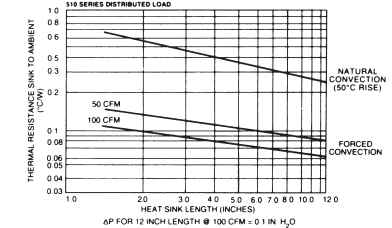
511 Series (Extrusion Profile 6438-1) 512 Series (Extrusion Profile 6438-2)

| Series | A | B | C | Flatness |
|-------------|-------------|--------------|-------------|----------------------------|
| 511-U 512-U | 0.250 (6.4) | 2.410 (61.2) | 0.372 (9.4) | 0.006 in./in. (0.15 mm/mm) |
| 511-M 512-M | 0.220 (5.6) | 2.350 (59.7) | 0.342 (8.7) | 0.002 in./in. (0.05 mm/mm) |



Dimensions: in. (mm)

NATURAL AND FORCED CONVECTION CHARACTERISTICS

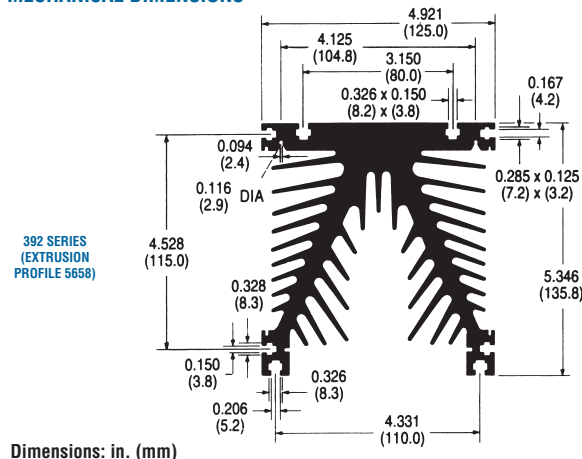


392 SERIES

High Performance Heat Sinks for Power Modules, IGBTs and Solid State Relays

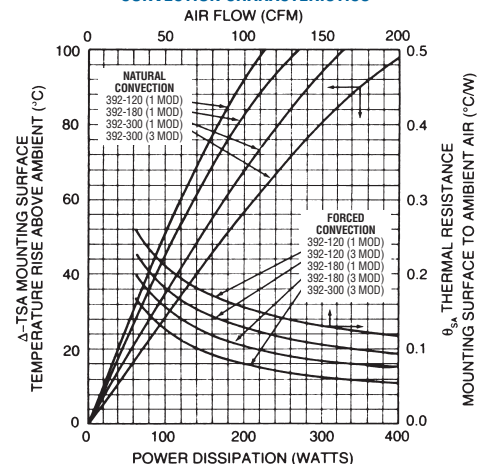
| Standard P/N, Finish | | Length in. (mm) | Thermal Resistance at Typical Load | | Weight lbs. (grams) |
|----------------------|--------------|--------------------|---|--|------------------------|
| Black Anodized | Gold Iridite | | Natural Convection (θ_{sa}) (°CW) | Forced Convection (θ_{sa}) (°CW) | |
| 392-120AB | 392-120AG | 4.725 (120.0) | 0.50 | 0.16 @ 100 CFM | 4.452 (2019.43) |
| 392-180AB | 392-180AG | 7.087 (180.0) | 0.43 | 0.11 @ 100 CFM | 6.636 (3010.09) |
| 392-300AB | 392-300AG | 11.811 (300.0) | 0.33 | 0.08 @ 100 CFM | 10.420 (4726.51) |

MECHANICAL DIMENSIONS



Dimensions: in. (mm)

NATURAL AND FORCED CONVECTION CHARACTERISTICS



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Wakefield-Vette:

[392-180AB](#) [558-75AB](#) [527-45AB](#) [537-45AB](#) [547-45AB](#) [557-140AB](#) [518-95AB](#) [528-24AB](#) [528-45AB](#) [527-24AB](#)
[537-24AB](#) [547-24AB](#) [559-50AB](#) [537-95AB](#) [547-95AB](#) [517-95AB](#) [144-E](#) [144-2](#) [392-300AB](#) [394-2AB](#) [395-2AB](#)
[403K](#) [423A](#) [435AAAA](#) [511-9M](#) [511-9U](#) [421K](#) [423K](#) [401K](#) [401A](#) [512-12M](#) [403A](#) [441K](#) [394-1AB](#) [433K](#) [510-3M](#)
[510-9U](#) [510-14M](#) [476K](#) [413K](#) [489K](#) [107](#) [511-6U](#) [392-120AB](#) [395-1AB](#) [486K](#) [510-6U](#) [144-C](#) [490-6K](#) [510-6M](#)
[511-3U](#) [144-D](#) [511-12M](#) [510-12M](#) [403F](#) [510-12U](#) [396-2AB](#) [465K](#) [421A](#) [413A](#) [401F](#) [396-1AB](#) [103](#) [512-6U](#) [403V](#)
[392-120AG](#) [511-12U](#) [512-12U](#) [431K](#) [490-12K](#) [511-6M](#) [510-9M](#) [511-3M](#) [476W](#) [421F](#) [623A](#) [143-C](#) [145-2](#) [143-2](#)
[512-9M](#) [512-6M](#) [145-E](#) [146-A](#) [510-3U](#) [510-14U](#) [512-3U](#) [512-9U](#)